

Gryllotalpa borealis.

Gryllotalpa longipennis Scudd. This and the preceding species of Mole Cricket are evidently common at times, but from their habits seldom observed. The former has been sent us as injuring potatoes.

CATALOGUE OF THE HEMIPTERA OF IOWA.

HERBERT OSBORN, AMES, IOWA.

A first notice of the Hemiptera was presented to the Academy in December, 1887, and a second in 1889. The third installment was presented September, 1890, and comprised sixty-seven species. The previous lists, not having been published, it will make the catalogue of much greater value to combine them here. This group of insects is an exceedingly important one, containing many very injurious species. While many of the especially destructive forms have had extended notice, no list of the species occurring in the State has hitherto appeared. Even now it is impossible to present anything like a full list since many species have been collected that are yet undetermined, and some of them are certainly undescribed. Moreover, from the numerous species constantly added to collections and the species known to occur in adjacent territory we may be sure that many species still await the collector. It is believed, however, that the publication of the list at the present time will greatly assist in increasing our knowledge of the group and enable us more rapidly to complete a catalogue that shall be fairly complete. It has been considered best to include only those species actually seen or recorded by some competent authority. Many species could be included as probably occurring here, but to include them would make the list of small value as indicating geographical distribution.

SUB ORDER HETEROPTERA.

FAMILY SCUTELLIERIDÆ.

Homæmus proteus Uhl. Sometimes rather common, but apparently somewhat local in distribution.

Eurygaster alternatus Say. Not common.

FAMILY CORIMELÆNIDÆ.

Corimelæna nitiduloides Wolf.

Corimelæna lateralis Fab. Sometimes fairly common.

Corimelæna pulicaria Germ. Negro Flea Bug. Abundant. Sometimes destructive to plants and often troublesome on raspberries on account of its offensive odor.

FAMILY CYDNIDÆ.

- Pangæus bilineatus* Say. One specimen, Adams county.
Amnestus spinifrons Say. Two specimens, Ames, Iowa. Rare.
Amnestus pusillus Uhl. One specimen, Ames, Iowa.

FAMILY PENTATOMIDÆ.

- Stiretrus anchorago* Fab. Common, not abundant.
Perillus claudus Say. Occurs rarely in the State.
Podisus cynicus Say. Not abundant.
Podisus placidus Uhl. Rare.
Podisus spinosus Dallas. Abundant.
Podisus modestus Dallas. One specimen, Ames.
Liotropis humeralis Uhl. Quite rare; Ames, Iowa.
Podops cinctipes Say. Rare; Ames, Iowa.
Brochymena arborea Say. Common.
Brochymena annulata Fab. Common.
Neottiglossa undata Say. Not common.
Cosmopepla carnifex Fab. Common, sometimes injurious on grape; also reported destructive on potato.
Mormidea lugens Fab. Common.
Euschistus fissilis Uhl. Common.
Euschistus servus Say. One specimen. Loc. ?
Euschistus tristigmus Say. Common.
Euschistus variolarius Pal. Beauv. Abundant; our most common species.
Euschistus ictericus. One specimen, doubtless taken in the State, in collection of H. H. Raymond.
Cænus delius Say. Rare.
Hymenarcys æqualis Say. Not common.
Hymenarcys nervosa Say. Usually rare.
Meneclis insertus Say. Ames; rare.
Trichopepla semivittata Say. Not common.
Peribalus limbolaricus Stal. Common. Frequents Golden Rod in autumn.
Thyanta custator Fab. Not common. This appears to be nearly its eastern limit for this latitude.
Nezara hilaris Say. Common.
Nezara pennsylvanica DeG.
Banasa euchlora Stal. One specimen.
Banasa calva Say. Not common.

FAMILY COREIDÆ.

- Corynocoris distinctus* Dallas. Common.
Archimerus calcarator Fab. Common.
Euthoetha galeator Fab. Common.
Metapodius femoratus Fab.
Metapodius terminalis Dallas.
Leptoglossus oppositus Say. One specimen from Winneshiek county.
Calorhina guttula Fab. One specimen.
Banasa tristis DeG. "Squash Bug." Common, sometimes destructive, but usually much less abundant here than in eastern States or in Kansas.

- Anasa armigera* Say. Not abundant.
Alydus curinus Say. Common.
Alydus ater Dallas. Variety of the preceding?
Alydus 5-spinosus. Not common.
Alydus pluto Uhl.?
Protenor belfragei Hagl.

FAMILY BERYTIDÆ.

- Jalysus spinosus* Say. Not common, or but seldom seen.
Corizus hyalinus Fab.
Corizus nigristernum Sign. Common, often swept from low herbage.
Leptocorisa trivittatus Say. Common in the west part of the State, sometimes destructive to Box Elder trees.

FAMILY LYGÆIDÆ.

Nysius angustatus Uhl. False Chinch Bug. Very abundant at times; resembles chinch bug in size and form, but is of a light gray color. Feeds mainly on purslane, amaranths, etc., but may injure potatoes and other crops.

Orsillactis producta Uhl.? One specimen.
Ichnorhynchus didymus Zett. Not common; appears to be more plentiful westward.

- Cymus angustatus* Stal. Common.
Cymodema tabida Spin.
Ischnodemus folicus Say. Common.
Blissus leucopterus Say. "Chinch bug." Very abundant at times.
Geocoris limbatus Stal.
Geocoris bullatus Say. Common; affects sugar beets.
Edancala dorsalis Say. Not common.
Ligyrocoris sylvestris Linn. Common.
Ligyrocoris constrictus Say. Several specimens from Des Moines.
Myodocha serripes Oliv. Rather rare.
Pamera basalis Dallas. Common.
Pamera bilobata Say. Rare.
Cnemodus mavortius Say.
Trapezonotus nebulosus Fall. Common.
Emblethis arenarius Linn. Not rare.
Rhyparochromus minutus Uhl. (MSS.)
Eremocoris ferus Say. Not common.
Microtoma carbonaria Rossi. Not rare; Ames, Iowa City, Des Moines.
Peliopelta abbreviata. Uhl. Common.
Melanocoryphus bicrucis Say. Rare at Ames.
Lygæus reclinatus Say. Common.
Lygæus turcicus Fab. Common.
Oncopeltus fasciatus Dallas. Not common.

FAMILY CAPSIDÆ.

- Megalocercæ debilis* Uhl. Abundant.
Megalocercæ rubicunda Uhl.
Miris affinis Reut. Common.

- Leptoterna amœna* Uhl. Common.
Trachelomiris oculatus Reut. Not abundant.
Lopidea confluens Say.
Phytocoris tibialis Reut. Ames.
Neurocolpus nubilus Say. Fairfax. Not common.
Compsocrocoris annulicornis Reut. Fairfax. Rhodes.
Calocoris rapidus Say. Very abundant; affects clover.
Oncognathus binotatus Fab. Ames and Fairfax.
Lygus pratensis Linn. "Tarnished plant bug." Very abundant and destructive, occurring on a great variety of plants.
Lygus plagiatus Uhl.
Lygus hirticulus Uhl.
Lygus invitus Say.
Lygus monachus Uhl.
Lygus ustulatus Uhl.
Coccobaphes sanguinarius Uhl.
Pæciloscytus basalis Reut.
Pæcilocapsus lineatus Fab. Common.
Pæcilocapsus goniphorus Say. Common.
Pæcilocapsus affinis Reut. Fairfax.
Pæcilocapsus marginalis Reut. Rather common.
Systratiotus americanus Reut. Fairfax.
Callicapsus histrio Reut.
Camptobrochis nebulosus Uhl.
Camptobrochis grandis Uhl. Rare.
Eccritotarsus elegans Uhl. Not common.
Sericophanes ocellatus Reut.
Hyaliodes vitripennis Say. Not common.
Inacora stalii Reut.
Malacocoris irroratus Say.
Halticus bractatus Say.
Stiphrosoma stygica Say.
Idolocoris agilis Uhl.
Macrocoleus coagulatus Uhl. A species agreeing with this, or very similar to it, occurs in abundance.
Plagiognathus pallipes Uhl.
Agalliastes associatus Uhl.
Agalliastes Sp.

FAMILY ACANTHIDÆ.

- Triphleps insidiosus* Say. Very abundant.
Acanthia lectularia Linn. "Bed-bug." Very abundant, locally.
Acanthia hirundinis Jenyns. Occurs in swallows' nests.

FAMILY TINGITIDÆ.

- Piesma cinerea* Say. Very abundant in 1887, occurring and breeding on Amaranth.
Corythuca ciliata Say. Abundant on Sycamore.
Corythuca arcuata Say. Common on Oak.
Gargaphia tilie Walsh. Common on Basswood.
Physatochila plexa Say. Fairfax.
Tingis clavata Stal. Fairfax.

FAMILY ARADIDÆ.

- Aradus robustus* Uhl. Abundant in 1886, locally.
Aradus similis Say.?
Aradus acutus Say.
Aradus americanus H. Schf. Common.
Aradus rectus Say.?

FAMILY PHYMATIDÆ.

- Phymata wolfii* Stal.

FAMILY NABIDÆ.

- Nabis fusca* Stein. Not common.
Coriscus subcoleoptratus Kirby. Common.
Coriscus fesus Linn. A very abundant species. Occurs in grass and preys upon a variety of injurious species.

FAMILY REDUVIIDÆ.

- Sinea diadema* Fab. Common.
Acholla multispinosa DeG. Common.
Fitchia nigrovittata Stal. Not abundant.
Milyas cinctus Fab. Common.
Diplodus luridus Stal. Not common.
Melanolestes picipes H. Schf. Common.
Melanolestes abdominalis H. Schf. Not common.
Pygolampis pectoralis Say. Rare.
Emsa sp. One specimen larva from Iowa City.

FAMILY HYDROBATIDÆ.

- Hygrotrechus remigis* Say. Common.
Hygrotrechus sp. One specimen.
Limnotrechus marginatus Say. Common.
Stephania picta H. Schf.
Metrobates hesperius Uhl. One specimen.

FAMILY VELIIDÆ.

- Mesovelia bisignata* Uhl. Once found quite plenty.
Hebrus pusillus Burm.

FAMILY SALDIDÆ.

- Salda coriacea* Uhl. One specimen.
Salda interstitialis Say. Common.
Salda humilis Say.

FAMILY BELOSTOMATIDÆ.

- Zaitlia fluminea* Say. Abundant.
Belostoma americanum Leidy. Very common.
Benacus griseus Say. Easily confounded with *americanum*

FAMILY NEPIDÆ.

- Nepa apiculata* Uhl. Not common.
Ranatra fusca Pal. Beauv. Common.

FAMILY NOTONECTIDÆ.

Notonecta undulata Say. Common.

Anisops platycnemis Fieb.

Plca striola Fieb.

FAMILY CORISIDÆ.

Corisa alternata Say. Common.

Corisa Harrisii Uhl.

SUB ORDER HOMOPTERA.

JASSIDÆ.

Diedrocephala mollipes. Say. A very common species everywhere.

Diedrocephala noveboracensis Fitch. Quite common but more frequent near thickets or in rather rank herbage.

Diedrocephala coccinea Forst. Not an abundant species, the form distinguished as *quadrivittatus* by Say. is a quite well marked variety and apparently quite constant.

Tettigonia hieroglyphica Say. A very common form and quite variable presenting extremes of light green and also almost black in color.

Tettigonia bifida Say. But rarely taken.

Proconia costalis Fab. Received from Carpenter, Iowa. Not found in the central part of the state.

Dorycephalus Sp. An interesting species collected at Ames by Prof. Gillette.

Parabolocratus viridis Uhler, Not very common.

Helochara communis Occurs in the state but appears to be very much less common than in some parts of the country.

Gypona octolineata Say. A common species represented by varieties which doubtless include the forms described as *flavilineata* and *scarlatina* by Fitch. all of which seem to connect by intergrading forms with the typical *octolineata*.

Gypona colon Fitch. Rare. A well marked form.

Penthimia americana Fitch.

Acocephalus sp. An undetermined, probably underscribed, species occurs quite commonly on low herbage.

Scaphoideus immistus Say. Rather common.

Typhlocyba vitis Harris. The common and abundant Leaf Hopper affecting the grape.

Typhlocyba vitifex Fitch. Common.

Typhlocyba comes Say.

Typhlocyba basillaris Say.

Typhlocyba tricincta Fitch.

Typhlocyba obliqua Say.

Typhlocyba vulnerata Fitch.

Typhlocyba trifasciata Say.

Empoa albipicta Forbes.

Empoa fabæ Harr. A species very abundant on beans must belong to this species though no full description is at hand by which to reach a positive conclusion.

Empoa rosæ Harr. Doubtless common but as in preceding species available descriptions are meager.

Empoasca mali LeB. Common.

Empoasca obtusa (—?). Fairly common.

Deltocephalus inimicus Say. A most abundant and injurious species affecting grasses.

Deltocephalus debilis Uhl. Abundant and destructive in grass.

Deltocephalus Sayi Fitch. Common but not abundant.

Deltocephalus mclsheimeri Fitch.

Deltocephalus Harrisii Fitch.

Deltocephalus retrorsus Uhl. (MS.)

Deltocephalus virgulatulus Uhl. (MS.)

Gnathodes punctatus Thunb.

Conogonus gagates.

Platymetopius acutus Say. This odd form is often to be found in considerable numbers.

Platymetopius frontalis VanD. Rare.

Grypotes unicolor Fitch. Common.

Athysanus curtisii Fitch. Taken in small numbers at Ames and Fairfax.

Athysanus striola Fall. Not common.

Athysanus obsoletus Kirsch.

Cicadula exitiosa Uhl. Common.

Cicadula 4-lineata Forbes.

Cicadula 6-notata Fall.

Phlepsius irroratus Say. A very common species here as well as throughout most of the United States and Mexico.

Phlepsius fulvidorsum Fitch.

Phlepsius spatulatus Van D. Not common.

Phlepsius nebulosus Van D. One specimen quite certainly collected in Iowa.

Eutettix jucundus Uhl. Rare. Specimens from Ames and Des Moines.

Paramesus sp. An interesting species undescribed.

Thamnotettix clitellarius Say. Rather common.

Thamnotettix seminudus Say. Common.

Thamnotettix melanogaster Prov. Common.

Thamnotettix kennicottii Uhl.

Cælidia olitaria Say. Common.

Cælidia subbifasciata Say. Quite common.

Idiocerus maculipennis Fitch.

Idiocerus alternata Fitch.

Idiocerus unicolor Fitch.?

Idiocerus provancheri Van D. (MS. ?)

Agallia quadripunctata Prov. Common.

Agallia sanguinolenta Prov. Very common, especially in clover.

Pediopsis insignis Van D.

Pediopsis tristis Van D.

Pediopsis viridis Fitch.

CERCOPIDÆ.

Clastopetera obtusa Say. Common.

Clastopetera proteus Fitch. Common.

Aphrophora quadrangularis Say. A very common species.

Aphrophora quadrinotata Say. Common at times, but not so constantly present as the preceding.

FULGORIDÆ.

Stenocranus dorsalis Fitch.

Stenocranus sp.

Delphax tricarinatus Say. Rather common.

Liburnia ornata Stal. Common.

Liburnia sp. approaches *vittatifrons*. Uhl., but is larger, darker and with longer wings than I have seen in specimens from other localities.

Cixius stigmatus Say. Not abundant.

Oliarus sp. An undertermined species; rather rare.

Helicoptera nava Say. Not abundant.

Ormenis pruinosa Say. Common.

Ormenis septentrionalis Spin. Am quite sure I have seen Iowa specimens of this common species, but have none at hand.

Amphiscepa bivittata Say. Quite common.

Bruchomorpha dorsata Fitch. Occasional.

Bruchomorpha oculata Newm. Rather rare.

Aphelonema simplex Uhl. More common than the preceding.

Lamenia vulgaris Fitch. Never noted as abundant.

Otiocerus signoretti Fitch. Seems to be our most common species of the genus.

Otiocerus wolffi Kirby.

Otiocerus stollii Kirby. Sometimes rather common.

Otiocerus amyotii Fitch.

Otiocerus degeerii Kirby. Not observed as common.

Phylloscelis pallescens Germ.

Scolops sulcipes Say. Sometimes rather common.

Scolops angustatus Uhl.

Scolops sp. A darker, longer winged form than either of the preceding is somewhat common.

CICADIDÆ.

Cicada tibicen Linn. The common "Dog Day Harvest Fly."

Cicada dorsata Say. One specimen from Poweshiek county brought in by a student.

Cicada rimosa Say. Specimens from Worth county and Tama county.

Cicada noveboracensis Fitch. Common, smaller than the preceding, and appears to me to be distinct though it has been regarded, by some writers, as a form of that species.

Cicada septendecim L. The seventeen year Cicada. Remarkable for the great length of its larval life. Two broods occur in the state, one occupying the eastern central portion and the other the south central portion.

MEMBRACIDÆ.

Ophiderma mera Say. Fairly common.

Ophiderma salamandra Fairm. Keokuk county. Probably will be found wherever black locust occurs.

Telamona reclivata Fitch.

Telamona monticola Fab. Not common.

Telamona ampelopsidis Harr. Not common. Perhaps this is identical with the preceding, but specimens in my collection show pretty distinct differences.

Telamona coryli Fitch (?). The single specimen at hand differs very slightly from Fitch's description which, however, is rather too meager for satisfactory determination.

Telamona acclivata Fitch. ?

Telamona cratægi Fitch (var. ?). Differs from Fitch's description and figure in lacking white band on back part of pronotum.

Telamona jagi Fitch (?). The outline of pronotum is a trifle different.

Telamona jugata Uhl. Apparently rather common.

Telamona fasciata Fitch.

Thelia acuminata Linn (?).

Thelia bimaculata Fab.

Thelia univittata Harr.

Thelia Uhleri Stal. Rather common.

Archasia galeator Fab.

Smilia vittata Am. et Serv. Several specimens from Waverly, Bremer county.

Cyrtosia vau Say.

Atymia querci Fitch. Rare.

Atymia inornata Say.

Ceresa diceros Say. Sometimes taken in numbers.

Ceresa bubalus Fab. A very common species and often destructive to trees by puncturing the twigs in depositing eggs.

Ceresa brevicornis Fitch. Not usually common.

Stictocephala inermis Fab. Common.

Stictocephala festina Say. Probably same as the preceding but smaller and slightly different in form.

Entilia sinuata Fab. Quite common.

Publilia concava Say. Often abounds on *Helianthus* and other plants.

Enchenopa binotata Say. Common, not abundant.

Enchenopa curvata Fab. Common. Lives on clover.

Microcentrus caryæ Fitch. Rare, or at least seldom seen.

PSYLLIDÆ.

Livia vernalis Fitch.

Psylla quadrilincata Fitch.

Psylla carpini Fitch (?)

Pachypsylla celtidis-mammæ Riley. Very common on hackberry.

Pachypsylla sp. Very abundant on hackberry leaves.

APHIDIDÆ.

Siphonophora rudbeckiæ Fitch. A common species on Rudbeckiæ and a number of other compositæ.

Siphonophora ambrosiæ Thos. Reported from Sioux City by Dr. Cyrus Thomas, Third Rept. Ill. Ins. p. 50.

Siphonophora asclepiadis Fitch. A species common on milkweed is quite surely this species.

Myzus cerasi Fab. Very common on cherry.

Myzus persicæ Abundant on wild plum.

Myzus ribis Linn. Common on currant, producing curled and highly colored leaves.

Drepanosiphum acerifoliæ Thos. Common on Soft maple and a very similar form has been taken on the sycamore.

Aphis mali Fab. Common on apple.

Aphis pruni Koch. (?) I cannot say with certainty that this species has been observed though common plum plant lice would seem to belong here.

Aphis prunifoliæ Fitch. Common on plum.

Aphis rumicis Linn. On Wahoo, Pigweed, Shepherds Purse, and is recorded by authors as occurring on a variety of other plants in other states and will doubtless be found the same here.

Aphis maidis Fitch. Reported to me as occurring on corn.

Aphis brassicæ Linn. Very common on cabbage.

Aphis viburni Schr. On Snowball.

Aphis carduella Walsh. Common on thistle.

Aphis medicaginis Koch. ? Rare on clover.

Aphis cornifoliæ Fitch. Common on Cornus.

Monellia caryella Fitch. Collected once on hickory at Ames.

Chaitophorus negundinis Thos. Common on box elder.

Myzocallis (?) sp. A species apparently undescribed observed in abundance on wild rye, *Elymus canadensis*.

Callipterus sp. Collected from clover.

Callipterus (?) sp. Has been collected by Mr. F. A. Serrine on Quaking Asp *Populus tremuloïdes*.

Melanoxanthus salicis Linn. Common on poplar and willow. It has been determined by Mr. F. A. Serrine to migrate in fall from willow to poplar to deposit winter eggs, and the second agamic brood in spring to acquire wings and return to willow.

Lachnus salicicola Uhl. (?) Abundant on willow.

Lachnus dentatus LeBaron. Abundant on willow.

Lachnus longistigma Monell. Occurs on European basswood.

Schizoneura lanigera Hauss. No specimens of this species have been collected here, but specimens of what is very evidently its work have been sent me from various parts of the State.

Schizoneura cratægi Oest. Very plentiful on Thorn trees.

Schizoneura americana Riley. Common on elm, curling the leaves.

Schizoneura corni Fab. Very common on *Cornus* and is considered as identical with the *S. panicola* of Thomas, which occurs during summer and early autumn on grass roots.

Glyphina ulmicola Fitch. Quite common on elms, producing the "Cockscomb gall."

Pemphigus tessclata Fitch. Occurs on alder and has been sent to me from the northeastern part of the State.

Pemphigus acerifolii Riley.

Pemphigus populi-transversus Riley. On cottonwood.

Pemphigus populicaulis Fitch. Abundant on cottonwood.

Pemphigus vagabundus Walsh. Its galls often to be seen on cottonwood.

Pemphigus rhois Fitch. Common on sumac.

Pemphigus sp. On smilax.

Chermes pinicorticis Fitch. Sometimes abundant on pines.

Phylloxera vastatrix Planch. Common on grapes.

Phylloxera carya-folia Fitch. On hickory leaves, producing galls.

COCCIDÆ.

Aspidiotus ancyclus Putnam.

Aspidiotus nerii Bouche. Common on oleander.

Diaspis cacti Comstock. On cactus in green-house.

Chionaspis furfurus Fitch. Common on a variety of trees and shrubs.

Chionaspis sulicis Linn. Very abundant on willow and ash.

Chionaspis pinifolii Fitch. This species has been reported, but I have not seen it myself in the State.

Mytilaspis citricola Pack. Frequently seen on oranges and lemons in the market, and doubtless occurs on orange trees where grown in the State.

Mytilaspis pomorum Bouche. Common on apple.

Dactylopius adonidum Linn. Common "mealy bug" of green-houses.

Lecanium hesperidum Linn. Common on oleander, etc.

Pulvinaria innumerabilis Rathvon. Common on maple and other trees.

Kermes galliformis Riley. Common on oak.

Kermes sp. A species evidently different from the preceding has been collected several times.

Orthezia americana Walk.

Sub Order PARASITA.

PEDICULIDÆ.

Pediculus capitis DeG. A not infrequent insect in some places.

Pediculus vestimenti Leach. Not collected in Iowa, but should, doubtless, be recorded.

Phthirus inguinalis Leach. Occurs in Iowa as well as other States.

Hematopinus euryternus Nitzsch. The most common suctorial louse of cattle.

Hematopinus vituli Linn. Less common than the preceding. Infests cattle.

Hematopinus urius Nitzsch. Common on hogs.

Hematopinus macrocephalus Burm. Occurs on horses; not common.

Hematopinus piliferus Burm. On dogs; not often seen.

Hematopinus suturalis Osborn. Very common on the ground squirrels *Spermophilus tridecemlinatus* and *Franklini* and also probably on the chipmunk *Tamias striatus*.

Hematopinus antennatus Osborn. Collected from fox squirrel.

Hematopinus sciuropteri Osborn. A very interesting species occurring on the flying squirrel *Sciuropterus volucella*.

Hematopinus hesperomydis Osborn. Occurs on the white-footed or deer mouse *Hesperomys leucopus* at Ames.

Hematopinus spinulosus Burm. On the rat, but not found in any great numbers; it is a very small species.

Hematopinus acanthopus Burm. Apparently common on our species of *Arvicola*.

Hematopinoides squamosus Osborn. Taken in very small numbers from the pocket gopher *Geomys bursarius*.